(No Model.)

G. T. FITZGERALD.

BOTTLE.

No. 588,413. Patented Aug. 17, 1897.

Fig. 1.

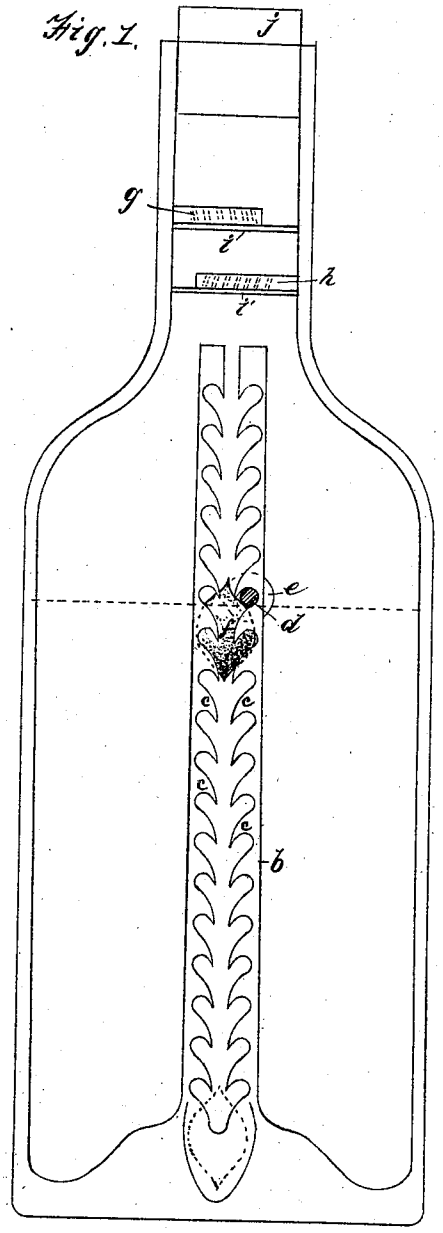


Fig. 2.

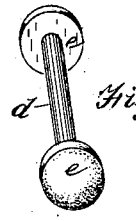


Fig. 3.

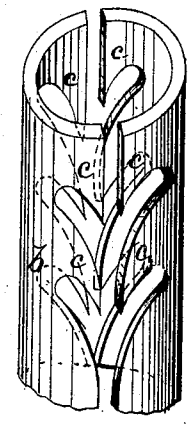
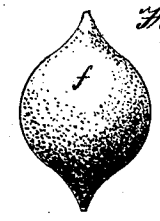


Fig. 4.



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UNITED STATES PATENT OFFICE.

GERALD T. FITZGERALD, OF SPRINGFIELD, MASSACHUSETTS, ASSIGNOR OF TWO-THIRDS TO DENNIS F. SWEENEY AND L. A. MARKS, OF SAME PLACE.

BOTTLE.

SPECIFICATION forming part of Letters Patent No. 588,413, dated August 17, 1897.

Application filed October 8, 1896. Serial No. 608,226. (No model.)

To all whom it may concern:

Be it known that I, GERALD T. FITZGERALD, a citizen of the United States of America, residing in Springfield, in the county of Hampden and State of Massachusetts, have invented new and useful Improvements in Bottles, of which the following is a specification, reference being had to the accompanying drawings, and letters of reference marked thereon.

My invention relates especially to the construction of bottles wherein the height of the original contents as it is drawn from time to time is indicated, so that the refilling in whole or in part of the bottle may be at once known.

The object of my invention is to produce a bottle which, while being inexpensive and having a free outlet, will clearly indicate from time to time the various heights of the original contents, so that the refilling or partial refilling of the bottle will be at once clearly indicated and detected.

My invention consists in the construction and arrangement herein pointed out.

In the accompanying drawings, in which like letters of reference indicate like parts, Figure 1 is an elevation of my improved construction. Fig. 2 is a perspective view of the indicator. Fig. 3 is a perspective view, on an enlarged scale, of a section of the vertically-arranged tube; and Fig. 4 is a side view of the float.

In detail, *a* indicates the bottle; *b*, the indicator-tube; *c*, projections thereon; *d*, indicator-rod; *e*, enlargements on the ends of said rod; *f*, float; *g* and *h*, partitions or protector-plates in the neck of the bottle; *i*, ledges on which said partitions rest, and *j* a stopper.

The construction and operation of my device will be readily understood on reference to the drawings, wherein is shown an indicator-tube *b*, preferably made of glass and provided with a vertical opening extending throughout nearly its whole extent for the passage of the indicator-rod *d* upwardly and downwardly through the same. Upon each side of said vertical opening are transverse openings formed between the projections *c*, which projections are inclined downwardly, so as to form openings between them for the reception of the indicator-rod, said openings being so formed as to effectually prevent movement of the indicator-rod upwardly, while at the same time permitting free downward movement of the same. A float *f* is arranged in said indicator-tube, which float has sufficient capacity to sustain the indicator-rod and prevent its moving downwardly and is so shaped that in addition to sustaining the indicator-rod it will thrust it to one side and cause it to enter the recess between said projections *c*. It will now be seen that as the contents of the bottle is withdrawn the float *f* will move downwardly with the surface of the liquid, allowing the indicator-rod to move downwardly at the same time. It will also be seen that if after a portion of the contents of the bottle has been withdrawn an additional supply be introduced the indticator cannot move upwardly, because of the fact that it is seated in said recessess, and that the float will continually maintain the indicator in that position and that the greater the quantity of liquid introduced the stronger will be the tendency of the float to rise to the surface, and thus the more strongly will the indicator be held in the position occupied by it at the time of the refilling or partial refilling of the bottle, and if the bottle be inverted the float will at once rise to the surface of the liquid, leaving the indicator in its original position, and if by any chance the indicator should be dislodged from its position and be moved toward the neck of the bottle immediately upon the bottle being returned to its proper vertical position the float rises to the surface, and as the motion of the float upwardly is very much more rapid than the motion of the indicator downwardly the float will have arrived at the surface before the indicator will have reached that point, and further motion of the indicator downwardly will be effectually stayed.

To avoid danger of the float and indicator being tampered with by the employment of a rod projected through the bottle-neck, I prefer to arrange partitions or safety-plates *g* in the bottle-neck, they consisting of plates provided with a series of openings preferably arranged at an angle and mounted in the neck of the bottle. I prefer that these plates be each a trifle more than a semicircle—*i. e.*, that they be shaped like disks with segments cut from them substantially as shown in Figs.

4 and 5, and the straight edges are arranged in opposite directions, one plate being below the other, so that in order to reach the float or indicator by the employment of a wire it would be necessary that it pass through a tortuous channel, thus avoiding danger of tampering with the device, as before stated. These disks or partitions may be inserted in the bottle in any convenient manner. I prefer that they rest upon ledges *i* and that they be fitted so tightly therein that danger of removal is avoided, or they may be cemented therein or placed in position while heated sufficiently so as to cause their edges to adhere to the material forming the neck, thus making them practically integral therewith.

I prefer that the indicator-tube *b* be constructed separately and that it be inserted in the bottle and secured therein while both are in a sufficiently-heated condition to cause them to adhere. It will readily be seen, however, that the bottle and indicator-tube may be formed, if desired, at the same time.

Having therefore described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The combination with a bottle of a slotted vertically-arranged tubular piece arranged therein, an indicating rod or piece arranged laterally in the slots of the tubular piece, and a float in the tubular piece and below the indicating-piece substantially as shown.

2. The combination with a bottle of a vertically-arranged tubular piece therein, having longitudinal slots in its side walls, the edges of said slots being provided with teeth or projections, an indicating-piece arranged in said slots, and a float tapering at its top portion arranged in the tubular piece below the indicator-piece, substantially as shown.

3. The combination with a bottle of a slotted tubular piece having teeth in the edges of the slots, an indicator-rod arranged in said slots and provided at the ends with enlargements arranged outside the tube, and a float arranged inside the tube below the rod, substantially as shown.

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